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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/614,708

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Tomoya Bando

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12/01/2005

MURATA MANUFACTURING COMPANY, LTD.

C/O KEATING & BENNETT, LLP

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SUITE 850

MCLEAN, VA 22102

EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/614,708	Applicant(s) BANDO, TOMOYA	
	Examiner Tuan T. Dinh	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-39 is/are pending in the application.
- 4a) Of the above claim(s) 6, 11-20, 25 and 30-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 7-10, 21-24 and 26-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In the response filed on 04/04/05, applicant elected Specie I (figure 1, claims 1-5, and 7-10) without traverse, and claims 6, and 11-20 are withdrawn from further consideration as being drawn to non-elected subject matter.

Claims 25, and 30-39 have the same limitations as the claims 6, and 11-20. Therefore, claims 25, and 30-39 are withdrawn from further consideration as being drawn to non-elected subject matter as the same of the claims 5, and 11-20 from the last Office action.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3-4, 8, 10, 21, 23, 27, 29 are rejected under 35 U.S.C. 102(b) as being anticipated by the Admitted by applicant (Prior Art-figure 8), hereafter APA.

As to claims 1, 4, 21, 23, APA discloses a multilayer ceramic substrate with a cavity (1) as shown in figure 8 (see pages 1-3 in a specification) comprising:

a multilayer composite member (4) including plurality ceramic layers (3) disposed one on another;

a cavity (7) formed the multilayer composite member (4) such that an opening (6) of the cavity (7) located least one principal surface (a bottom surface 5) of the multilayer composite member (4);

a bottom-surface conductive film (13) disposed on a bottom surface the cavity (7);

an electronic component (8) disposed in the cavity (7), and electrically connected to the bottom conductive film (13);

a capacitor conductive film (10) disposed in the multilayer composite member (4) such that the capacitor conductive film (13) faces bottom-surface conductive film via (not shown) at least ceramic layer (13), see paragraph 2 of page 1 through paragraph 1 of page 2; wherein

the bottom surface conductive film (13) is connected to a ground potential, see page 3, lines 5-10, and the bottom surface conductive film (13) and the capacitor conductive film (10) defining a capacitor (because there are two conductive film (13, 10) would defined a capacitance therebetween).

As to claims 3, 21, APA discloses the electronic component (8) is adhered on the bottom-surface conductive film via a non-conductive-adhesive, see lines 14-16, page 3.

As to claims 8, 27, APA discloses the capacitor conductive film (10) is constructed the shape of strip-line (film) such that distributed constant capacitance (a value capacitance is formed between two layers) defined between capacitor conductive film and bottom-surface conductive film.

As to claims 10, 29, APA discloses the substrate (1) in figure 8 when the multilayer ceramic substrate (1) is mounted on a mounting motherboard (2), the principal surface (the bottom surface 5) of the multilayer composite member (4) with the cavity (7) comes into contact with the mounting motherboard (2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 7, 9, 24, 26, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over (the APA, figure 8) in view of Bird et al. (U.S. Patent 5,831,810).

As to claims 5, 24, APA discloses the bottom-surface conductive film (13) disposed so as to extend into the inside of multilayer composite member (4), APA does not disclose the bottom surface conductive film across an edge of the bottom surface of the cavity.

Bird et al. shows in figure 2 that a ground layer (44, column 4, line 20) disposed and extended inside a multilayer ceramic substrate (12, column 3, lines 55-56, and column 4, lines 24-25) across an edge of a bottom surface of a cavity (14, column 3, line 56).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a conductive layer (ground layer) disposed and extended

across an edge of a bottom surface of a cavity of a substrate as taught by Bird et al. employed in the substrate of APA in order to reduce noise and filtering signal through an interlayer connection.

As to claims 7, 26, APA does not disclose the capacitor conductive film (10) is disposed so as to face the bottom-surface conductive film (13) via a single ceramic layer.

Bird et al. shows in figure 2 the ceramic substrate (12) having a conductive layer (42) faced a ground layer (44) via a single ceramic layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a conductive layer faced a ground layer via a single ceramic layer as taught by Bird et al. employed in the substrate of APA in order to increase capacitance.

As to claims 9, 28, APA does not disclose an external terminal electrode, which is to be electrically connected a mounting motherboard when the multilayer ceramic substrate is mounted on the mounting motherboard is formed on an outer surface of the multilayer composite member, and the bottom-surface conductive film is electrically connected to the external terminal electrode.

Bird et al. shows in figure 2 the multilayer ceramic substrate (12) comprising an external terminal electrode (metal wiring pins 36, column 4, line 4) connected to a circuit board (column 4, lines 4-6), and a bottom surface conductive film is electrical connected to the electrode (by vias form inside the substrate 12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an external terminal electrode connected to a circuit board, and a bottom surface conductive film is electrical connected to the terminal electrode as taught by Bird et al. employed in the substrate of APA in order to ground signal of substrate built-in chip connected on a board.

Response to Arguments

5. Applicant's arguments with respect to claims 1, and 3-39 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues:

(a) APA does not disclose "the bottom surface conductive film connected to a ground potential."

Examiner disagrees because in page 3, lines 5-10 of the specification of the instant application, applicant discloses in figure 8 (Prior Art), the ground potential being applied to the bottom surface conductive film. Therefore, the bottom surface conductive film is electrical connected to the ground potential.

(b) APA does not disclose "the bottom conductive film and the capacitor conductive film form as a capacitor."

Examiner disagrees because there is/are capacitance between the two conductive film; therefore it is form a capacitor between the two conductive film.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

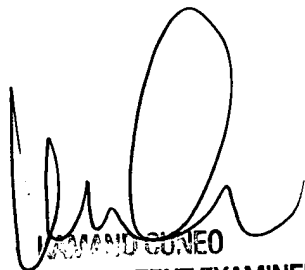
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Dinh
November 21, 2005.



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SUPERVISORY PATENT EXAMINER
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